

*E1*

1. Apparatus for printing characters on a record medium in accordance with input data, comprising:  
an electronic printer having means for producing dot matrix patterns on a record medium,  
a microprocessor connected to said electronic printer,  
a data input connected to said microprocessor, and  
a look-up table connected to said microprocessor that contains information of the characters to be printed on the record member by said printer in the form of different dot sizes, whereby characters with smoothed edges may be produced by said electronic printer.

2. The apparatus of claim 1 wherein said electronic printer is a light emitting diode printer.

3. The apparatus of claim 1 wherein said electronic printer is a jet ink printer.

4. The apparatus of claim 1 wherein said electronic printer is a thermal printer.

5. The apparatus of claim 1 wherein said electronic printer is a dot matrix printer.

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6. Method of printing text characters on a record medium in accordance with input data, comprising:

supplying an electronic printer having means for providing dot matrix patterns on a record medium, connecting a microprocessor to the electronic printer,

connecting a data input to the microprocessor, and

connecting to the microprocessor a look-up table containing information of various size dots required to produce characters with smooth edges, and creating a character with different dot sizes on the record medium.

7. Dot matrix printing apparatus for printing characters on a record medium, comprising:

an array containing a plurality of light emitting diodes,

means for selectively enabling the light emitting diodes,

means for supplying a signal representative of the characters to be printed,

means for receiving the signal representative of the character to be printed,

means for determining the composition of dot sizes and locations that will produce characters having smoothed edges, and

means for transmitting said determination to said enabling means so as to enable selectively said light emitting diodes.

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*C* 8. A method of dot matrix printing for printing characters on a record medium, comprising:

supplying information relative to the characters to be printed,

*C* *smooth* determining the dot sizes that would result in characters having smooth *edges* *CS* *surfaces*, and ✓

generating a dot matrix in accordance with the determination and information supplied.

*75* 9. Apparatus for printing characters in accordance with digital input data, comprising:

an ink jet printer having a plurality of capillary tubes with transducers connected thereto, ✓

an electronic bank having leads connected to the transducers,

a microprocessor connected to said electronic bank,

a data input connected to said microprocessor, and

a look-up table connected to said microprocessor that contains information of the characters to be printed by said printer with a character being represented by dots of different sizes whereby a character with smoothed edges may be generated.

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10. Apparatus for printing characters in accordance with digital input data, comprising:

a thermal printer having a thermal head capable of creating a dot matrix or thermal paper,

a microprocessor connected to said thermal printer,

a data input connected to said microprocessor, and

a look-up table connected to said microprocessor that contains information of the characters to be printed by said printer with a character being represented by different sizes whereby a character with smoothed edges may be generated.

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11. Apparatus for printing, comprising:

means for producing dots on a record medium,

means for controlling the location of said dots on said record medium to produce characters,

means for supplying information of the characters to be printed to said producing means, and

means for controlling the dot sizes so as to produce characters with smooth edges.

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12. The apparatus in claim 10 wherein said means for producing dots comprises means for creating ink dots on a sheet of paper.

*CS* 13. A method of printing, <sup>*the steps*</sup> ~~this step~~ comprising:  
producing dots on a record medium,  
controlling the location of said dots on said  
record medium to produce characters,  
supplying information of the characters to be  
printed to said producing means, and  
controlling the dot sizes so as to produce  
characters with smooth edges.

*8* 14. The method of claim ~~8~~ <sup>*7*</sup> wherein said step for  
producing dots comprises means for producing ink dots on a  
sheet of paper.

*N* 15. A light scanning apparatus, comprising: means  
for generating a plurality of laser beams of different  
diameters, means for modulating the amplitude of each beam,  
means for directing said plurality of beams onto a path in  
sequence, a multifaceted reflective polygon positioned in  
the path, means for rotating the polygon, the beams being  
reflected from successive facets of the polygon and sweeping  
along a scan path to provide successive raster lines, and a  
photoreceptor positioned to have the raster lines extending  
thereacross.

<sup>9</sup>  
~~16.~~ Apparatus for printing characters on a record medium in accordance with input data, comprising:  
an electronic printer having means for producing dot matrix patterns on a record medium,  
a microprocessor connected to said electronic printer,  
a data input connected to said microprocessor, and  
a look-up table connected to said microprocessor that contains maps of the characters to be printed on the record member by said printer wherein a character representation is composed of <sup>at least three</sup> ~~a plurality of~~ maps having different dot sizes with dots of a single size on each map whereby maps for a given character when combined form a character with <sup>intermeshed dots and smooth</sup> ~~smoothed~~ edges.

~~17. The apparatus of claim 16 wherein said electronic printer is a light emitting diode printer.~~

~~18. The apparatus of claim 16 wherein said electronic printer is a jet ink printer.~~

~~19. The apparatus of claim 16 wherein said electronic printer is a thermal printer.~~

<sup>10</sup>  
~~20.~~ The apparatus of claim <sup>9</sup> ~~16~~ wherein said electronic printer is a dot matrix printer.

21. Method of printing text characters on a record medium in accordance with input data, comprising:

supplying an electronic printer having means for providing dot matrix patterns on a record medium, connecting a microprocessor to the electronic printer,

connecting a data input to the microprocessor, and

connecting a <sup>look</sup> ~~look~~-up table containing maps of the characters to be printed to the microprocessor, creating a character by using <sup>at least three</sup> ~~a plurality of~~ maps with dots of a different size on each map to form characters with <sup>intermeshed dots and smooth</sup> ~~smoothed~~ edges.

22. A method of dot matrix printing for printing characters on a record medium, comprising:

supplying information relative to the characters to be printed,

determining the dot sizes that would result in characters having smooth surfaces, and

enabling an array of light emitting diodes in accordance with the determination and information supplied.

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23. Apparatus for printing characters in accordance with digital input data, comprising:

an ink jet printer having a plurality of capillary tubes with transducers connected thereto,

an electronic bank having leads connected to the transducers,

a microprocessor connected to said electronic bank,

a data input connected to said microprocessor, and

a look-up table connected to said microprocessor that contains maps representative of the portion of each of the characters to be printed by said printer with a character being represented by a plurality of maps, each map having a different dot size whereby the map for different portions of a character when combined form a character with smoothed edges.

24. Apparatus for printing characters in accordance with digital input data, comprising:

a thermal printer having a thermal head capable of creating a dot matrix on thermal paper,

a microprocessor connected to said thermal printer,

a data input connected to said microprocessor, and

a look-up table connected to said microprocessor that contains maps of the characters to be printed by said printer with a character being represented by a plurality of maps, each map having dots of a different size whereby the map for different portions of a character when combined form a character with smoothed edges.



25. A light scanning apparatus, comprising: means for generating a plurality of laser beams of different diameters, means for directing said plurality of beams onto a path in sequence, a multifaceted reflective polygon positioned in the path, means for rotating the polygon, the beams being reflected from successive facets of the polygon and sweeping along a scan path to provide successive raster lines, and a photoreceptor positioned to have the raster lines extending thereacross.